

State Intellectual Property Office of People's Republic of China

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Applicant(s)	Murata Manufacturing Co., Ltd.	Issuing Date: October 31, 2003
Patent Agent(s)	Ruifeng CHEN	
Application No.	02102311.5	
Title of Invention	Electronic Component and Manufacturing Method for the same	

THE FIRST OFFICE ACTION

1. ☒ The applicant has filed a request for substantive examination on _____ (day/month/year). The examiner has proceeded the substantive examination on the above mentioned patent application for invention in accordance with the provisions of Article 35(1) of the Chinese Patent Law.
- ☐ The Patent Office has decided to proceed a substantive examination on the above mentioned patent application for invention in accordance with the provisions of Article 35(2) of the Chinese Patent Law.
2. ☒ The applicant claimed:
- the filing date 2001.1.29 in the Japan Patent Office as the priority date,
- the filing date _____ in the _____ Patent Office as the priority date,
- the filing date _____ in the _____ Patent Office as the priority date,
- the filing date _____ in the _____ Patent Office as the priority date,
- the filing date _____ in the _____ Patent Office as the priority date.
- ☒ The applicant has provided a copy of the priority documents certified by the Patent Office where the prior application(s) was/were filed.
- ☐ The applicant has not provided a copy of the priority documents certified by the Patent Office where the prior application(s) was/were filed and the priority claim(s) is/are deemed not to have been made in accordance with the provisions of Article 30 of the Chinese Patent Law.
3. ☐ The applicant submitted amendment (s) to the application on _____ and on _____, wherein the amendment (s) submitted on _____ and _____ on _____ are unacceptable, because said amendment(s) is/are not in conformity with
- ☐ the provisions of Article 33 of the Chinese Patent Law;
- ☐ the provisions of Rule 51 of the Implementing Regulations of the Chinese Patent Law.
- The detailed reasons for the amendments being unacceptable is described in the text of this Office Action.
4. ☒ The examination is proceeded based on the application documents originally filed.
- ☐ Description:
- Pages _____ of original application documents filed don the application date,
- Pages _____ filed on; Pages _____ filed on;
- Pages _____ filed on; Pages _____ filed on;

Chinese Patent Law.

- ☒ Claim 1 is not in conformity with the provisions of Article 26(4) of the Chinese Patent Law.
- ☐ Claim _____ is not in conformity with the provisions of Article 31(1) of the Chinese Patent Law.
- ☒ Claim 1,6,8,9,11,14,17,19,21 is not in conformity with the provisions of Rule 20 to 23 of the Implementing Regulations of the Chinese Patent Law.
- ☐ Claim _____ is not in conformity with the provisions of Article 9 of the Chinese Patent Law.
- ☐ Claim _____ is not in conformity with the provisions of Rule 12(1) of the Implementing Regulations of the Chinese Patent Law.

The detailed analysis for above conclusive opinion is described in the text of this office action.

7. On the basis of the above conclusive opinion, the examiner holds that:

- ☐ The applicant should make amendment in accordance with the requirements described in the text of this office action.
- ☐ The applicant should expound reasons for that the above mentioned patent application can be granted patent right, and make amendments to the specification which is not in conformity with the provisions as described in the text of this office action; otherwise the patent right shall not be granted.
- ☒ The patent application does not possess any substantive contents for which patent right may be granted, if the applicant fails to expound reasons or the reasons expounded are not sufficient, this application will be rejected.
- ☐

8. The applicant shall pay attention to the following matters:

- (1) In accordance with the provisions of Article 37 of the Chinese Patent Law, the applicant shall submit a response within four months from the date of receiving this office action. If the applicant fails to meet the time limit without any justified reason, the application shall be deemed to have been withdrawn.
- (2) The amendment made by the applicant shall be in conformity with the provisions of Article 33 of the Chinese Patent Law. The amendment shall be submitted in duplicate copies and in a format which is in accordance with the relevant provisions of the Examination Manual.
- (3) The applicant's response and/or amended documents shall be mailed or submitted to the Receiving Department of the Chinese Patent Office. The documents which are not mailed or submitted to the Receiving Department do not possess legal effect.
- (4) The applicant and/or his(its) agent shall not come to the Chinese Patent Office to interview with the examiner without an appointment.

9. The text of this office action consists of a total of 5 sheets, and is accompanied by the following annexes:

☒ A copy of the cited reference documents consisting of 2 sets and 11 sheets.

☐ The 9-C Examination Department

The Seal of the Examiner: Leping SHEN

☐ Claims:

Pages _____ of original application documents filed don the application date,

Pages _____ filed on; Pages _____ filed on;

Pages _____ filed on; Pages _____ filed on;

☐ Drawings:

Pages _____ of original application documents filed don the application date,

Pages _____ filed on; Pages _____ filed on;

Pages _____ filed on; Pages _____ filed on;

☐ Abstract: ☐ Filed on the application date; ☐ filed on _____

☐ Drawing to the Abstract: ☐ Filed on the application date; ☐ filed on _____

5. ☐ This Notification is issued without a search having been conducted.

☒ This Notification is issued with a search having been conducted.

☒ The following reference documents have been cited in this office action(their serial numbers will be referred to in the ensuing examination procedure):

Serial No.	Reference document(Number or Title)	Publication Date (or Filing date of interference patent applications)
1	US-5808397A	15day 09 month 1998year
2	CN-1119371A	27day 03 month 1996year
3		day month year
4		day month year

6. The conclusive opinion of the examiner is as follows:

☐ Description:

☐ The subject matter of the application falls into the scope, on which no patent right shall be granted, defined by Article 5 of the Chinese Patent Law.

☐ The description is not in conformity with the provisions of Article 26(3) of the Chinese Patent Law.

☐ The description is not in conformity with the provisions of Rule 18 of the Implementing Regulations of the Chinese Patent Law.

☒ Claims:

☐ Claim _____ falls into the scope, on which no granted patent right shall be granted, provided by Article 25 of the Chinese Patent Law.



☐ Claim _____ is not in conformity with the definition of invention prescribed by Rule 2(1) of the Implementing Regulations of the Chinese Patent Law.


☐ Claim _____ does not possess novelty provided by Article 22(2) of the Chinese Patent Law.

☒ Claim 1-21 does not possess inventiveness provided by Article 22(3) of the Chinese Patent Law.

☐ Claim _____ does not possess practical applicability provided by Article 22(4) of the

中华人民共和国国家知识产权局

邮政编码: 100080 北京市海淀区海淀路 80 号中科大厦 16 层 中科专利商标代理有限责任公司 陈瑞丰		 审查员签章	 专利审查业务章 104
申请号	02102311.5	部门及通知书类型	9-C
申请人	株式会社村田制作所		
发明名称	电子部件及其制造方法		



第一次审查意见通知书

1. ☒ 依申请人提出的实审请求, 根据专利法第 35 条第 1 款的规定, 审查员对上述发明专利申请进行实质审查。
☐ 根据专利法第 35 条第 2 款的规定, 国家知识产权局决定自行对上述发明专利申请进行审查。
2. ☒ 申请人要求以其在:

_____ 日本 _____ 专利局的申请日 2001 年 1 月 29 日为优先权日,
 _____ 专利局的申请日 _____ 年 _____ 月 _____ 日为优先权日,
 _____ 专利局的申请日 _____ 年 _____ 月 _____ 日为优先权日,
 _____ 专利局的申请日 _____ 年 _____ 月 _____ 日为优先权日,
 _____ 专利局的申请日 _____ 年 _____ 月 _____ 日为优先权日。

☒ 申请人已经提交了经原申请国受理机关证明的第一次提出的在先申请文件的副本。
☐ 申请人尚未提交经原申请国受理机关证明的第一次提出的在先申请文件的副本, 根据专利法第 30 条的规定视为未提出优先权要求。
3. ☐ 申请人于 _____ 年 _____ 月 _____ 日和 _____ 年 _____ 月 _____ 日提交了修改文件。
 经审查, 其中: _____ 年 _____ 月 _____ 日提交的 _____ 不能被接受;
 _____ 年 _____ 月 _____ 日提交的 _____ 不能被接受;
 因为上述修改 ☐ 不符合专利法第 33 条的规定。 ☐ 不符合实施细则第 51 条的规定。
 修改不能被接受的具体理由见通知书正文部分。
4. ☒ 审查是针对原始申请文件进行的。
☐ 审查是针对下述申请文件的:

申请日提交的原始申请文件的权利要求第 _____ 项、说明书第 _____ 页、附图第 _____ 页;
 _____ 年 _____ 月 _____ 日提交的权利要求第 _____ 项、说明书第 _____ 页、附图第 _____ 页;
 _____ 年 _____ 月 _____ 日提交的权利要求第 _____ 项、说明书第 _____ 页、附图第 _____ 页;
 _____ 年 _____ 月 _____ 日提交的权利要求第 _____ 项、说明书第 _____ 页、附图第 _____ 页;
 _____ 年 _____ 月 _____ 日提交的说明书摘要, _____ 年 _____ 月 _____ 日提交的摘要附图。
5. ☐ 本通知书是在未进行检索的情况下作出的。
☒ 本通知书是在进行了检索的情况下作出的。
☒ 本通知书引用下述对比文献(其编号在今后的审查过程中继续沿用):

编号	文件号或名称	公开日期
1	US-5808397A	1998 年 9 月 15 日
2	CN-1119371A	1996 年 3 月 27 日
3		年 月 日
4		年 月 日

6. 审查的结论性意见:

☐ 关于说明书:

☐ 申请的内容属于专利法第 5 条规定的不授予专利权的范围。

☐ 说明书不符合专利法第 26 条第 3 款的规定。

☐ 说明书的撰写不符合实施细则第 18 条的规定。

☐

☒ 关于权利要求书:

☐ 权利要求 不具备专利法第 22 条第 2 款规定的新颖性。

☒ 权利要求 1-21 不具备专利法第 22 条第 3 款规定的创造性。

☐ 权利要求 不具备专利法第 22 条第 4 款规定的实用性。

☐ 权利要求 属于专利法第 25 条规定的不授予专利权的范围。

☒ 权利要求 1 不符合专利法第 26 条第 4 款的规定。

☐ 权利要求 不符合专利法第 31 条第 1 款的规定。

☐ 权利要求 不符合专利法实施细则第 2 条第 1 款关于发明的定义。

☐ 权利要求 不符合专利法实施细则第 13 条第 1 款的规定。

☒ 权利要求 1, 6, 8, 9, 11, 14, 17, 19, 21 不符合专利法实施细则第 20 条至第 23 条的规定。

☐

上述结论性意见的具体分析见本通知书的正文部分。

7. 基于上述结论性意见, 审查员认为:

☐ 申请人应按照通知书正文部分提出的要求, 对申请文件进行修改。

☐ 申请人应在意见陈述书中论述其专利申请可以被授予专利权的理由, 并对通知书正文部分中指出的不符合规定之处进行修改, 否则将不能授予专利权。

☒ 专利申请中没有可以被授予专利权的实质性内容, 如果申请人没有陈述理由或者陈述理由不充分, 其申请将被驳回。

☐

8. 申请人应注意下述事项:

(1) 根据专利法第 37 条的规定, 申请人应在收到本通知书之日起的肆个月内陈述意见, 如果申请人无正当理由逾期不答复, 其申请将被视为撤回。

(2) 申请人对其申请的修改应符合专利法第 33 条的规定, 修改文本应一式两份, 其格式应符合审查指南的有关规定。

(3) 申请人的意见陈述书和/或修改文本应邮寄或递交国家知识产权局专利局受理处, 凡未邮寄或递交给受理处的文件不具备法律效力。

(4) 未经预约, 申请人和/或代理人不得前来国家知识产权局专利局与审查员举行会晤。

9. 本通知书正文部分共有 5 页, 并附有下列附件:

☒ 引用的对比文件的复印件共 2 份 11 页。

☐

审查 九 部

审查员 沈 乐 平

审查部门业务专用章

(未加盖审查业务专用章的通知书不具备法律效力)

第一次审查意见通知书正文

本申请涉及一种电子部件及其制造方法，经审查，提出如下审查意见：

权利要求 1 要求保护一种电子部件，该权利要求的主题名称后没有标点符号，因而权利要求 1 不符合专利法实施细则第二十三条第一款的规定。另外，该权利要求中出现了“大约”、“实际上”这种含义不确定的表述，因而权利要求 1 不符合专利法实施细则第二十条第一款有关清楚的规定。还有，说明书实施例中只记载了一对引线端子设有杯状支撑部，从说明书实施例中不能推导出存在多于一对的引线端子具有杯状支撑部，因而权利要求 1 概括的范围过大，得不到说明书的支持，不符合专利法第二十六条第四款的规定。即使克服了上述缺陷，权利要求 1 还存在下述问题。对比文件 1 公开了一种压电谐振器设备，其中说明书第二栏第三十至五十一行及附图 1-2 披露了如下内容：压电谐振器（1）由压电基板（2）和振荡电极（3a）和振荡电极（3b）组成；输入端子（5）和输出端子（7）分别通过由输入端子（5）和输出端子（7）的上部弯曲而成的杯状部分（6）和杯状部分（8）来支撑压电元件；杯状部分（6）和杯状部分（8）分别与振荡电极（3a）和振荡电极（3b）焊接在一起；输入端子（5）和输出端子（7）的一个端部向外弯曲大约 90 度的角度，由一个位于弯曲点顶端的延伸部分确定一个扁平部分，使该扁平部分实际上平行于该引线端子的一个导引端而延伸，并且由所述向内弯曲的扁平部分确定所述杯状部分（6）和杯状部分（8）。权利要求 1 与对比文件 1 的区别在于：所述至少一对引线端子由导电线材制成。对比文件 2 公开了一种复合电子组件及其制造方法，其中说明书第七页第十七行第九页第十五行及附图 1-2 披露了如下内容：三个引线端 20、30、和 40 由圆形引线制成，上述引线端在其前部具有弄平了的连接部分 21、31 和 41；输入和输出端 20 和 30 的连接部分 21 和 31 具备狭端 21a 和 31a，把该狭端 21a 和 31a 配置在由电容器元件 10 的二个端部和谐振器元件 1 的侧表面确定的侧面台阶内，上述连接部分 21 和 31 还具备分别在狭端 21a 和 31a 内部形成 L 状阻挡面 21b 和 31b，输入端 20 和输出端 30 的连接部分 21 和 31 彼此是对称的。对比文件 1 和 2 所公开的技术方案与权利要求 1 要求保护的技术方案属于同一技术领域，对比文件 2 给出了为了降低材料的损失可将圆形引线的上部压成平面做成一合适的形状来支撑压电

元件以替代对比文件 1 中的金属板的技术启示，因而权利要求 1 要求保护的技术方案不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 2 引用了权利要求 1，该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 说明书第七页第十七至十八行，附图 1-2）。因而当权利要求 2 引用的权利要求 1 的技术方案不具备创造性时，权利要求 2 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 3 引用了权利要求 1，该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 附图 1 和 2）。因而当权利要求 3 引用的权利要求 1 的技术方案不具备创造性时，权利要求 3 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 4 引用了权利要求 1，该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 说明书第九页第十二至十五行）。因而当权利要求 4 引用的权利要求 1 的技术方案不具备创造性时，权利要求 4 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 5 引用了权利要求 1，该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 说明书第七页第十七至十八行）。因而当权利要求 5 引用的权利要求 1 的技术方案不具备创造性时，权利要求 5 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 6 引用了权利要求 1，该权利要求中出现了“约”这种含义不确定的表述，因而权利要求 6 不符合专利法实施细则第二十条第一款有关清楚的规定。即使克服了上述缺陷，权利要求 6 还存在下述问题。由于直径为 0.48mm 的圆形引线是一种被广泛使用的引线，因而当权利要求 6 引用的权利要求 1 的技术方案不具备创造性时，权利要求 6 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 7 引用了权利要求 1，由于直径为 0.48mm 的圆形引线是一种被广泛使用的低碳钢制成、并且表面上镀铜和在铜镀层上镀有软焊料的导线，因而当权利要求 7 引用的权利要求 1 的技术方案不具备创造性时，权利要求 7 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 8 引用了权利要求 1，该权利要求中出现了“约”这种含义不确定

的表述，因而权利要求 8 不符合专利法实施细则第二十条第一款有关清楚的规定。即使克服了上述缺陷，由于扁平部分的尺寸只是一种设计上的选择，因而当权利要求 8 引用的权利要求 1 的技术方案不具备创造性时，权利要求 8 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 9 引用了权利要求 1，该权利要求所引用的权利要求 1 的标号前出现不明黑印，导致权利要求 9 不符合专利法实施细则第二十条第一款有关清楚的规定。即使克服了上述缺陷，由于该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 附图 2）。因而当权利要求 9 引用的权利要求 1 的技术方案不具备创造性时，权利要求 9 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 10 引用了权利要求 1，该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 说明书第九页第三至十一行）。因而当权利要求 10 引用的权利要求 1 的技术方案不具备创造性时，权利要求 10 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 11 要求保护一种制造电子部件的方法，该权利要求中出现了“约”、“实际上”这种含义不确定的表述；在第一次出现“引线端子”、“扁平部”这两个技术特征时在其前面加上了“所述”，基于上述两点，权利要求 11 不符合专利法实施细则第二十条第一款有关清楚的规定。即使克服了上述缺陷，由于权利要求 11 是与权利要求 1 相对应的方法权利要求，因而基于与评述权利要求 1 相同的理由，权利要求 11 的技术方案不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 12 引用了权利要求 11，该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 说明书第十页倒数第一行至第十一页五行）。因而当权利要求 12 引用的权利要求 11 的技术方案不具备创造性时，权利要求 12 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 13 引用了权利要求 11，该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 说明书第十一页第十四至十八行及附图 2）。因而当权利要求 13 引用的权利要求 11 的技术方案不具备创造性时，权利要求 13 的技术

方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 14 引用了权利要求 11，该权利要求中出现了“约”这种含义不确定的表述；因而权利要求 14 不符合专利法实施细则第二十条第一款有关清楚的规定。即使克服了上述缺陷，由于弯曲部位的选择只是一种设计上的需要。因而当权利要求 14 引用的权利要求 11 的技术方案不具备创造性时，权利要求 14 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 15 引用了权利要求 11，该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 说明书第九页第三至十一行）。因而当权利要求 15 引用的权利要求 11 的技术方案不具备创造性时，权利要求 15 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 16 引用了权利要求 11，该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 说明书第九页第十二至十五行）。因而当权利要求 16 引用的权利要求 11 的技术方案不具备创造性时，权利要求 16 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 17 引用了权利要求 11，该权利要求所引用的权利要求 11 的标号后出现不明黑印，导致权利要求 17 不符合专利法实施细则第二十条第一款有关清楚的规定。即使克服了上述缺陷，由于该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 说明书第七页第十七至十八行，附图 1-2）。因而当权利要求 17 引用的权利要求 11 的技术方案不具备创造性时，权利要求 17 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 18 引用了权利要求 11，该权利要求的附加技术特征也被对比文件 2 披露了（参见对比文件 2 说明书第七页第十七至十八行）。因而当权利要求 18 引用的权利要求 11 的技术方案不具备创造性时，权利要求 18 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 19 引用了权利要求 11，该权利要求中出现了“约”这种含义不确定的表述，因而权利要求 19 不符合专利法实施细则第二十条第一款有关清楚的

规定。即使克服了上述缺陷，权利要求 19 还存在下述问题。由于直径为 0.48mm 的圆形引线是一种被广泛使用的引线，因而当权利要求 19 引用的权利要求 11 的技术方案不具备创造性时，权利要求 19 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 20 引用了权利要求 11，由于直径为 0.48mm 的圆形引线是一种被广泛使用的低碳钢制成、并且表面上镀铜和在铜镀层上镀有软焊料的导线，因而当权利要求 20 引用的权利要求 11 的技术方案不具备创造性时，权利要求 20 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

权利要求 21 引用了权利要求 11，该权利要求中出现了“约”这种含义不确定的表述，因而权利要求 8 不符合专利法实施细则第二十条第一款有关清楚的规定。即使克服了上述缺陷，由于扁平部分的尺寸只是一种设计上的选择，因而当权利要求 21 引用的权利要求 11 的技术方案不具备创造性时，权利要求 21 的技术方案也不具有突出的实质性特点，不具备专利法第二十二条第三款规定的创造性。

基于上述理由，本申请目前的文本不能被授予专利权，如果申请人不能够在指定的期限内充分陈述本申请具备创造性的理由，本申请将被驳回。

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[12] 发明专利申请公开说明书

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权利要求书 8 页 说明书 14 页 附图页数 5 页

[54]发明名称 复合电子组件及其制造方法

[57]摘要

一种复合电子组件包括以胶粘材料固定在一起的谐振器元件和电容器元件。该电容器元件比该谐振器元件长，以便在其二个端部上确定侧面台阶。以焊料将第一和第二引线端与电容器元件的前表面上的第一和第二电容器电极及与暴露在侧面台阶处、位于该谐振器元件的侧表面上的谐振器电极相连接。以焊料使第三引线端与电容器元件后表面上的第三电容器电极连接。得到适于 Colpitts 振荡电路的薄的微型低成本复合电子组件。

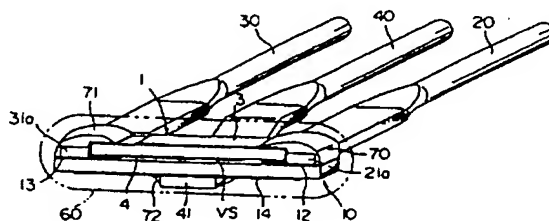


图 5 是显示把压电母基板和电介质母板固定在一起形成的母单元的一个透视图;

图 6 是显示从图 5 中示出的母单元切出的构成一个单元的芯片的一个透视图;

图 7 是显示用于制造多个在图 1 中示出的复合电子组件的一个祖母单元的一个透视图;

图 8 是显示根据本发明的第二实施例的一个谐振器单元的一个透视图; 以及

图 9 是显示根据本发明的第三实施例的一个复合电子组件的一个透视图。

图 1 和图 2 显示根据本发明的第一实施例的、适合于一个 Colpitts 振荡电路的一个复合电子组件。

该组件包括一个谐振器元件 1、一个与该谐振器元件 1 固定在一起的电容器元件 10 以及三个连接到这些元件 1 和 10 的引线端 20、30 和 40。用保护性树脂 60 密封元件 1 和 10 的外围。

图 3 是该组件的一个电路图。

17 该元件 1 是以一种厚度切变模式振动的一种能量陷阱型压电谐振元件, 它包括一个由压电陶瓷或一种压电单晶制成的薄而细长的矩形压电基板 2、以及在该基板 2 上形成的谐振器电极 3 和 4。该谐振器电极 3 和 4 具有在该基板 2 的二个主表面的中心位置上相对地形成的振动部分 3a 和 4a、以及具有分别从振动部分 3a 和 4a 出发通过该基板的较短的侧表面向相对的主表面延伸的端部 3b 和 4b。

该电容器元件 10 由一个细长的矩形电介质平板 11 形成, 该

电介质平板例如由一种如玻璃环氧树脂或氧化铝陶瓷的材料制成, 该电介质平板 11 具有比压电基板 2 高的强度。该电介质平板 11 沿其一个长边的长度 L_2 比压电基板 2 的长度 L_1 长, 该电介质平板 11 沿其一个短边的宽度 W_2 大致与压电基板 2 的宽度 W_1 相等。根据本实施例, 如图 2 中所示, 压电基板 2 和电介质平板 11 的长度 L_1 和 L_2 分别是 5.0mm 和 6.7mm, 宽度 W_1 和 W_2 是 0.45mm。

在该电介质平板 11 的一个前表面的二端上形成第一和第二电容器电极 12 和 13, 同时形成一个第三电容器电极 14, 使其覆盖整个后表面的大部分, 从而使电极 12 和 14 以及电极 13 和 14 的相对部分形成二个电容器。通过胶粘剂 15 和 16 把该谐振器元件 1 的一个后表面固定到该电容器元件 10 的前表面, 以便由于这些胶粘剂 15 和 16 的厚度的缘故在该电容器元件 10 和该谐振器元件 1 之间确定一个振动空间 V_S 。虽然在该实施例中把普通的绝缘胶粘剂用作胶粘剂 15 和 16, 但在另一种方式下可使用导电胶粘剂。通过使用导电胶粘剂, 在结合谐振器元件 1 和电容器元件 10 时, 可使电极 3 和 12 以及电极 4 和 13 彼此连接在一起。

三个引线端 20、30 和 40 例如由直径为 0.4~1.0mm 的园形引线制成, 引线端 20、30 和 40 的柄 22、32 和 42 由带子 50 和 51 以一种平行方式进行支撑。该引线端 20、30 和 40 在其前端部具备弄平了的连接部分 21、31 和 41。输入和输出端 20 和 30 的连接部分 21 和 31 具备狭端 21a 和 31a, 把该狭端 21a 和 31a 配置在由电容器元件 10 的二个端部和谐振器元件 1 的侧表面确定的侧面台阶内, 上述连接部分 21 和 31 还具备分别在狭端 21a 和 31a 内

形成的 L 状阻挡面 21b 和 31b, 因此, 输入和输出端 20 和 30 的连接部分 21 和 31 彼此是对称的。

通过焊料部件 70 把输入端 20 的狭端 21a 连接到电极 3b 和 12, 通过焊料部件 71 把输出端 30 的狭端 31a 连接到电极 4b 和 13。因此就把狭端 21a 和 31a 以及谐振器元件 1 横方向地放置在电容器元件 10 上, 从而可减少该复合电子组件的厚度。再者, 因为狭端 21a 和 31a 的宽度 d_3 、 d_4 比侧面台阶 17 和 18 的宽度 d_1 、 d_2 小, 故引线端 20 和 30 不会伸出到电容器元件 10 的侧面之外, 从而也可减少该复合电子组件沿纵向的尺寸。另一方面, 通过一个焊料部件 72 把沿该电容器元件 10 的后表面弯曲的接地引线端 40 的连接部分 41 连接到第三电容器电极 14 的一个中心部分。

用保护性树脂部件 60 把包括引线端 20、30 和 40 的连接部分 21、31 和 41 的元件 1 和 10 的外围密封起来。在进行该树脂部件 60 的密封工艺之前, 可用一种如硅酮橡胶等的弹性部件覆盖该谐振器元件 1 (至少包括其振动区域) 的外围。

现在描述一种制造多个具有上述结构的复合电子组件的方法。

如图 4 中所述, 备制用于生产该谐振器元件 1 的一个压电母基板 2A 和用于生产该电容器元件 10 的一个电介质母板 11A。该母基板 2A 具有一个沿其短边方向的宽度 L_1 , 该宽度 L_1 等于压电基板 2 沿其长边方向的长度 L_1 。该母基板 2A 在其二个表面上具备分别对应于谐振器电极 3 和 4 的母电极 3A 和 4A。另一方面, 母板 11A 具有一个沿其短边方向的宽度 L_2 , 该宽度 L_2 等于电介质平板 11 沿其长边方向的长度 L_2 。该母板 11A 在其上表面

上具备对应于电容器电极 12 和 13 的母电极 12A 和 13A, 在其下表面上具备对应于电容器电极 14 的一个母电极 14A, 该母电极 14A 与母电极 12A 和 13A 的一部分相对。

然后, 通过胶粘剂 15 和 16 把母基板 2A 固定在母板 11A 的上表面上并且在二板之间保留一个振动空间 VS, 使母基板 2A 的二个端部放置在母板 11A 的母电极 12A 和 13A 上, 从而得到如图 5 中所示的一个母单元 Y。可通过一种例如丝网印刷的技术以薄膜的形式把胶粘剂 15 和 16 涂敷在母电极 12A 和 13A 上或母基板 2A 的下表面上。

对具有固定在一起的母基板 2A 和母板 11A 的母单元 Y 沿如图 5 中所示的垂直于母基板 2A 和母板 11A 的长度方向的线 CL1 以一个单个元件的宽度 (W_1 , W_2) 进行切割, 从而得到多个如图 6 中所示的构成一个单元的芯片 X。在该构成一个单元的芯片 X 的二个侧端处由该电容器元件 10 的上表面和该谐振器元件 1 的侧表面确定侧面台阶 17 和 18。

然后, 把构成一个单元的芯片 X 插在三个引线端 20、30 和 40 之间, 该三个引线端的柄 22、32 和 42 由图 2 中所示的带子 50 和 51 来支撑, 并由引线端 20、30 和 40 对其进行弹性的支撑。此时, 输入和输出端 20 和 30 的狭端 21a 和 31a 与侧面台阶 17 和 18 相啮合, 同时, 接地端 40 的连接部分 41 与电容器元件 10 的第三电容器电极 14 进行加压力的接触。再者, 引线端 20 和 30 的阻挡面 21b 和 31b 支撑谐振器元件 1 的下表面, 从而可防止该构成一个单元的芯片 X 发生位移。

在这种支撑状态下, 通过焊料部件 70 把引线端 20 的狭端

1a 焊接到暴露在侧面台阶 17 处的电极 3 和 12, 同时通过焊料部件 71 把引线端 30 的狭端 31a 焊接到暴露在侧面台阶 18 处的电极 4 和 13。如图 1 中所示, 通过焊料部件 72 把引线端 40 的连接部分 41 焊接到相对电极 14。因此, 使引线端 20、30 和 40 与谐振器元件 1 和电容器元件 10 进行机械的结合和电连接。

因为谐振器元件 1 的电极 3 和 4 的端部 3b 和 4b 从振动部分 3a 和 4a 处延伸以致覆盖侧表面, 故该端部 3b 和 4b 必定暴露在侧面台阶 17 和 18 上。因此, 通过焊料部件 70 可以可靠地使引线端 20 与电容器电极 12 以及端部 3b 相连接。通过焊料部件 71 也可以可靠地使引线端 30 与电容器电极 13 以及端部 4b 相连接。

其后通过一种例如浸渍涂覆的技术, 用保护性树脂部件 60 把包括引线端 20、30 和 40 的连接部分 21、31 和 41 的构成一个单元的芯片 X 的外围密封起来, 从而完成了该复合电子组件的制造。

当通过自动插入机把该复合电子组件插入印刷电路板内时, 把该引线端 20、30 和 40 的柄 22、32 和 42 从带子 50、51 处切开, 其后把柄 22、32 和 42 插入印刷电路板的通孔内并进行切割和弄弯。此时, 因为柄 22、32 和 42 是由圆形引线形成的, 故使用自动插入机来进行切割和弄弯的操作是容易的。

图 7 示出另一种制造多个如图 1 中所示的复合电子组件的方法。

一个尺寸很大的电介质祖母板 11B 在其上表面上具备许多条状电极 19A, 以及在一个下表面上具备许多与电极 19A 部分地相对的条状电极 19B。

说明书附图

图 1

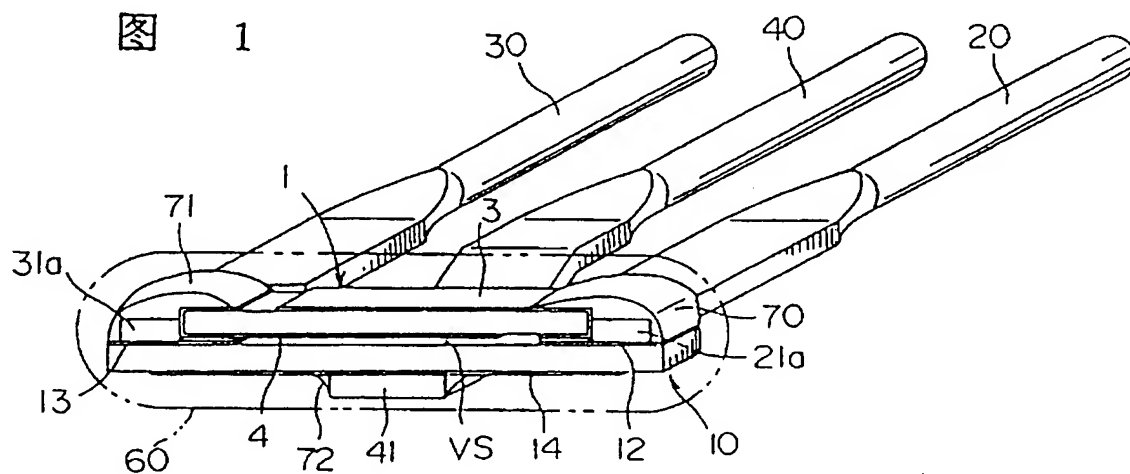
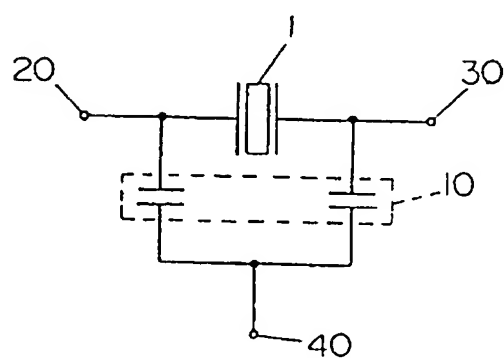
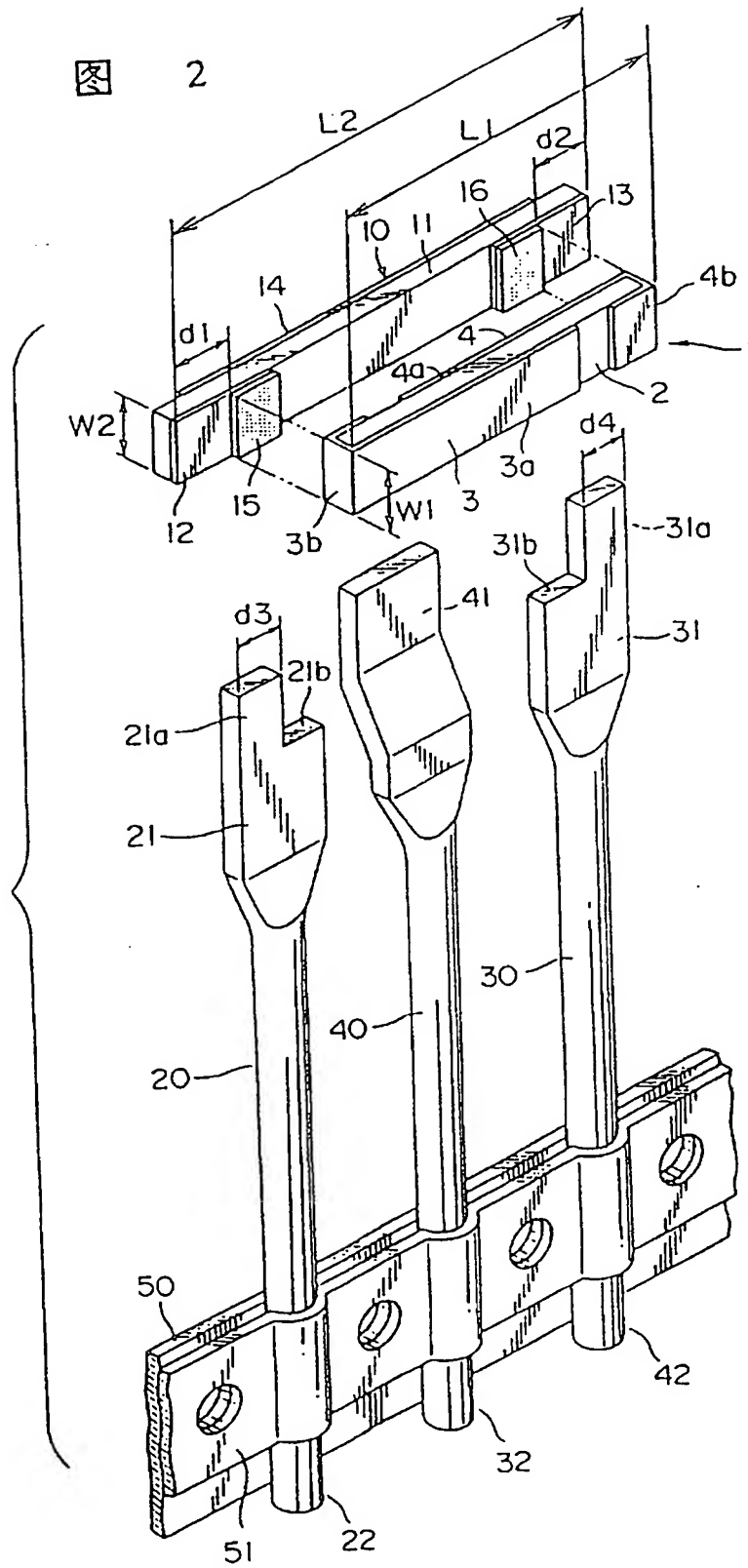


图 3



图

2



2

The Detailed Office Action

The application an electronic component and manufacturing method for the same. Some objections are arisen by the examiner as follows, after a substance examination.

1. Regarding Claim 1

① Claim 1 claims an electronic component, in which the terms such as “*about*” and “*substantially*” are used and it results in Claim 1 has an unclear claimed scope since each of the above terms has the unclear meaning. So, Claim 1 is not in conformity with the provision of the 1st paragraph of Rule 20 of the Implementing Regulations of CPL.

The following is a quotation of the 1st paragraph of Rule 20 of the Implementing Regulations of the Patent Law of the People’s Republic of China:

The claims shall define clearly and concisely the matter for which protection is sought in terms of the technical features of the invention or utility model.

② According to the disclosed embodiment, there is only a example concerning that a pair of lead terminals has cup-shaped holder portions. But it is impossibly obtained, that is the situation concerning that *at least* a pair of lead terminals has cup-shaped holder portions from said embodiments. This results in that Claim 1 is not supported by the disclosure from the description and it is not in conformity with the provision of the 4th paragraph of Article 26 of CPL.

The following is a quotation of the 4th paragraph of Article 26 of the Patent Law of the People’s Republic of China:

The claims shall be supported by the description and shall state the extent of the patent protection asked for.

③ Even through the above defects are removed, Claim 1 is still not in conformity with the provision of the 3rd paragraph of Article 22 of CPL, since

it lacks the inventiveness.

The reference 1 (US 5,808,397) discloses a piezoelectric resonance device, and the corresponding technical contains are written wherein as follows (cf. lines 30-51, column 2 and Figs. 1 and 2). The piezo-resonator (1) is composed of a piezoelectric substrate (2) and the oscillation electrodes (3a, 3b). The input and output terminals (5, 7) support both sides of piezo-resonator (1) with cup portions (6, 8) which are formed by bending upper portions of the terminals (5, 7), respectively. Said cup portions (6, 8) are soldered to the oscillation electrodes (3a, 3b), respectively. Each of one end portion of the input and output terminals (5, 7) is bent outwards at an angle of about 90°, a plat portion is defined by an extended portion on the tip side from the bending point so as to be extended substantially parallel to a lead portion of the lead terminal, and the cup portion is defined by the plat portion being bent inwards.

It can be found the difference between Claim 1 and reference 1 is only that *the at least a pair of lead terminals are made of a conductive wire*.

However, the reference 2 (CN 1119371=JP 8084043(A)/3221253(B2)) discloses a composite electronic component and the method of manufacturing the same, and the following technical contains are written wherein (cf. line 17, page 7 through line 15, page 9 and Figs. 1 and 2 in Chinese edition). The three lead terminals (20, 30, 40) are made of round lead wires. The above lead terminals are provided at forward ends thereof with flattened connecting portions (21, 31, 41). The connecting portions (21, 31) of the input and output terminals (20, 30) are provided with narrow ends (21a, 31a) which are arranged in side steps defined by both end portions of the capacitor element 10 and those of the resonator element 1, and with L-shaped stop surfaces (21b, 31b) formed inside the narrow ends (21a, 31a) respectively, so that the connecting portions (21, 31) of the input and output terminals (20, 30) are

symmetrical to each other.

It is obvious that the technical solutions of the references 1 and 2 belong in the same technical field with that of the claimed technical solution by Claim 1. Also a technical revelation is taught by the reference 2 that the metal flat plate in reference 1 may be replaced through making the upper pressed plane of the round lead wire into an appropriate shape to support the piezoelectric element in order to reduce the loss of the material. Thus the technical solution of Claim 1 has not the prominent substantive feature, so it has not the inventiveness.

The following is a quotation of the 3rd paragraph of Article 22 of the Patent Law of the People's Republic of China:

Inventiveness means that, as compared with the technology existing before the date of filing, the invention has prominent substantive feature and represents a notable progress and that the utility model has substantive features and represents progress.

2. Regarding Claim 2

Claim 2 refers to Claim 1 and an additive technical feature contained in Claim 2 is also disclosed by the reference 2 (cf. lines 17-18, page 7 and Figs. 1 and 2 in Chinese edition). While Claim 1 referred by Claim 2 lacks the inventiveness, the technical solution of Claim 2 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

3. Regarding Claim 3

Claim 3 refers to Claim 1 and an additive technical feature contained in Claim 3 is also disclosed by the reference 2 (cf. Figs. 1 and 2 therein). While Claim 1 referred by Claim 3 lacks the inventiveness, the technical solution of Claim 3 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

4. Regarding Claim 4

Claim 4 refers to Claim 1 and the additive technical features contained in Claim 4 are also disclosed by the reference 2 (cf. lines 12-15, page 9 in Chinese edition). While Claim 1 referred by Claim 4 lacks the inventiveness, the technical solution of Claim 4 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

5. Regarding Claim 5

Claim 5 refers to Claim 1 and an additive technical feature contained in Claim 5 is also disclosed by the reference 2 (cf. lines 17-18, page 7 in Chinese edition). While Claim 1 referred by Claim 5 lacks the inventiveness, the technical solution of Claim 5 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

6. Regarding Claim 6

Claim 6 refers to Claim 1 and an additive technical feature contained in Claim 6 relates to a round lead wire of about 0.48mm in diameter. However, this is a very widely used lead wire in this art. Therefore, while Claim 1 referred by Claim 6 lacks the inventiveness, the technical solution of Claim 6 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

Furthermore, a word “*about*” is used therein and it results in Claim 6 has an unclear claimed scope since the above word has the unclear meaning. So, Claim 6 also is not in conformity with the provision of the 1st paragraph of

Rule 20 of the Implementing Regulations of CPL.

7. Regarding Claim 7

Claim 7 refers to Claim 1 and the additive technical features contained
5 in Claim 7 relate to a wire made of a low-carbon steel and having copper
plated on a surface thereof and a molten solder plated on the copper plating as
a round lead wire of 0.48mm in diameter. However, this is a very widely used
lead wire and technology in this art. Therefore, while Claim 1 referred by
Claim 7 lacks the inventiveness, the technical solution of Claim 7 similarly
10 has not the prominent substantive feature, so it has not the inventiveness and
is not still in conformity with the provision of the 3rd paragraph of Article 22
of CPL.

8. Regarding Claim 8

15 Claim 8 refers to Claim 1 and the additive technical feature contained in
Claim 8 only relates to a selection concerning a design for the dimension of
the flattened portion. However, this is only a very widely used technology in
this art. Therefore, while Claim 1 referred by Claim 8 lacks the inventiveness,
the technical solution of Claim 8 similarly has not the prominent substantive
20 feature, so it has not the inventiveness and is not still in conformity with the
provision of the 3rd paragraph of Article 22 of CPL.

Furthermore, a word “*about*” is used therein and it results in Claim 8 has
an unclear claimed scope since the above word has the unclear meaning. So,
Claim 8 also is not in conformity with the provision of the 1st paragraph of
25 Rule 20 of the Implementing Regulations of CPL.

9. Regarding Claim 9

Claim 9 refers to Claim 1 and the additive technical features contained in

Claim 9 are also disclosed by the reference 2 (cf. Fig.2). While Claim 1 referred by Claim 9 lacks the inventiveness, the technical solution of Claim 9 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

10. Regarding Claim 10

Claim 10 refers to Claim 1 and the additive technical features contained in Claim 10 are also disclosed by the reference 2 (cf. lines 3-11, page 9 in Chinese edition). While Claim 1 referred by Claim 10 lacks the inventiveness, the technical solution of Claim 10 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

11. Regarding Claim 11

① Claim 11 claims a method for manufacturing an electronic component, in which the terms such as “*about*” and “*substantially*” are used and it results in Claim 11 has an unclear claimed scope since each of the above terms has the unclear meaning. So, Claim 11 is not in conformity with the provision of the 1st paragraph of Rule 20 of the Implementing Regulations of CPL.

② Even through the above defect are removed, Claim 11 is still not in conformity with the provision of the 3rd paragraph of Article 22 of CPL, since it lacks the inventiveness.

According to the examiner’s knowledge, as Claim 11 claims a method corresponding to the claimed electronic component by Claim 1, thus it has not the prominent substantive feature based on the same reasons as that of Claim 1 (note: sic). So Claim 11 has not the inventiveness and is not in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

12. Regarding Claim 12

Claim 12 refers to Claim 11 and an additive technical feature contained in Claim 12 is also disclosed by the reference 2 (cf. last line, page 10 through line 5, page 11 in Chinese edition). While Claim 11 referred by Claim 12 lacks the inventiveness, the technical solution of Claim 12 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

13. Regarding Claim 13

Claim 13 refers to Claim 11 and an additive technical feature contained in Claim 13 is also disclosed by the reference 2 (cf. lines 14-18, page 11 and Fig. 2 in Chinese edition). While Claim 11 referred by Claim 13 lacks the inventiveness, the technical solution of Claim 13 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

14. Regarding Claim 14

Claim 14 refers to Claim 11 and an additive technical feature contained in Claim 14 relates to a selection concerning the bent position, which is only a demand in the design. While Claim 11 referred by Claim 14 lacks the inventiveness, the technical solution of Claim 14 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

Furthermore, a word "*about*" is used therein and it results in Claim 14 has an unclear claimed scope since the above word has the unclear meaning. So, Claim 14 also is not in conformity with the provision of the 1st paragraph of

Rule 20 of the Implementing Regulations of CPL.

15. Regarding Claim 15

Claim 15 refers to Claim 11 and the additive technical features contained
5 in Claim 15 are also disclosed by the reference 2 (cf. lines 3-11, page 9 in
Chinese edition). While Claim 11 referred by Claim 15 lacks the
inventiveness, the technical solution of Claim 15 similarly has not the
prominent substantive feature, so it has not the inventiveness and is not still in
conformity with the provision of the 3rd paragraph of Article 22 of CPL.

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16. Regarding Claim 16

Claim 16 refers to Claim 11 and an additive technical feature contained
in Claim 16 is also disclosed by the reference 2 (cf. lines 12-15, page 9 in
Chinese edition). While Claim 11 referred by Claim 16 lacks the
15 inventiveness, the technical solution of Claim 16 similarly has not the
prominent substantive feature, so it has not the inventiveness and is not still in
conformity with the provision of the 3rd paragraph of Article 22 of CPL.

17. Regarding Claim 17

20 Claim 17 refers to Claim 11 and an additive technical feature contained
in Claim 17 is also disclosed by the reference 2 (cf. lines 17-18, page 7 and
Figs. 1 and 2 in Chinese edition). While Claim 11 referred by Claim 17 lacks
the inventiveness, the technical solution of Claim 17 similarly has not the
prominent substantive feature, so it has not the inventiveness and is not still in
25 conformity with the provision of the 3rd paragraph of Article 22 of CPL.

18. Regarding Claim 18

Claim 18 refers to Claim 11 and an additive technical feature contained

in Claim 17 is also disclosed by the reference 2 (cf. lines 17-18, page 7 in Chinese edition). While Claim 11 referred by Claim 18 lacks the inventiveness, the technical solution of Claim 18 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

19. Regarding Claim 19

Claim 19 refers to Claim 11 and an additive technical feature contained in Claim 19 relates to a round lead wire of about 0.48mm in diameter. However, this is a very widely used lead wire in this art. Therefore, while Claim 11 referred by Claim 19 lacks the inventiveness, the technical solution of Claim 19 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22 of CPL.

Furthermore, a word “*about*” is used therein and it results in Claim 19 has an unclear claimed scope since the above word has the unclear meaning. So, Claim 19 also is not in conformity with the provision of the 1st paragraph of Rule 20 of the Implementing Regulations of CPL.

20. Regarding Claim 20

Claim 20 refers to Claim 11 and the additive technical features contained in Claim 20 relate to a wire made of a low-carbon steel and having copper plated on a surface thereof and a molten solder plated on the copper plating as a round lead wire of 0.48mm in diameter. However, this is a very widely used lead wire and technology in this art. Therefore, while Claim 11 referred by Claim 20 lacks the inventiveness, the technical solution of Claim 20 similarly has not the prominent substantive feature, so it has not the inventiveness and is not still in conformity with the provision of the 3rd paragraph of Article 22

of CPL.

21. Regarding Claim 21

Claim 21 refers to Claim 11 and the additive technical features contained
5 in Claim 21 only relate to a selection concerning a design for the dimension
of the flattened portion. However, this is a very widely used technology in
this art. Therefore, while Claim 11 referred by Claim 21 lacks the
inventiveness, the technical solution of Claim 21 similarly has not the
prominent substantive feature, so it has not the inventiveness and is not still in
10 conformity with the provision of the 3rd paragraph of Article 22 of CPL.

Furthermore, a word "*about*" is used therein and it results in Claim 21 has
an unclear claimed scope since the above word has the unclear meaning. So,
Claim 21 also is not in conformity with the provision of the 1st paragraph of
Rule 20 of the Implementing Regulations of CPL.

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In view of the above reasons, the present application can not be granted as
a patent based on the present application text. The application will be rejected,
except the applicant can provide the sufficient reasons to argue that the
application has the inventiveness within the appointed time limit as this office
20 action.